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Title:

What information counts at the moment of practice: Information practice of renal nurses

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ABSTRACT

Aims

This paper is a report of a study to identify how renal nurses experience information about renal care and the information practices that they used to support everyday practice.

Background

What counts as nursing knowledge remains a contested area in the discipline yet little research has been undertaken. Information practice encompasses a range of activities such as seeking, evaluation and sharing of information. The ability to make informed judgement is dependent on nurses being able to identify relevant sources of information that inform their practice and those sources of information may enable the identification of what knowledge is important to nursing practice.

Method

The study was philosophically framed from a practice perspective and informed by Habermas and Schatzki; it employed qualitative research techniques. Using purposive sampling six registered nurses working in two regional renal units were interviewed during 2009 and data was thematically analysed.

Findings

The information practices of renal nurses involved mapping an information landscape in which they drew on information obtained from epistemic, social and corporeal sources. They also used coupling, a process of drawing together information from a range of sources, to enable them to practice.

Conclusion

Exploring how nurses engage with information, and the role the information plays in situating and enacting epistemic, social and corporeal knowledge into everyday nursing

practice is instructive because it indicates that nurses must engage with all three modalities in order to perform effectively, efficiently and holistically in the context of patient care.

What is already known about this topic

- What is allowed as nursing knowledge is disputed in the literature as arguments reflect particular ontological and epistemological arguments.
- Information practice is an emerging focus of research which encompasses activities such as information seeking, information sharing, evaluation of information, critical thinking and reflection.

What this paper adds

- Mapping an information landscape was a strategy used by renal nurses to connect with a range of information modalities.
- Renal nurses couple evidence-based sources of information and aesthetic ways of knowing in the moment of practice.
- Corporeality and the role of the body (embodiment) influence the ‘how’ of the renal nursing practice.

Implications for practice and/or policy

- Understanding information practices of nurses could enable the development of an adult learning framework which assists making the art of nursing teachable to novice nurses.

Keywords

Knowledge, information practice, communities of practice, nurses, Habermas, Schatzki

INTRODUCTION

Since the publication of Carper's (1978) *Fundamental Patterns of Knowing in Nursing*, what counts as nursing knowledge remains a contested area with a range of arguments and approaches explicating particular ontological and epistemological arguments (Benner 1984, Cloutier et al. 2007, Holmes et al. 2008, Porter & O'Halloran 2008, Scheel et al. 2008, Porter & O'Halloran 2009). There are numerous points of contention in this debate including what constitutes nurses knowledge; what types of nursing knowledge exist; and how does the process of knowing develop in nurses (Mantzoukas & Jasper 2007, Bonis 2009). An important area of debate is whether Carper's advocacy for aesthetic knowledge, identified as the art of nursing and characterized by intuition, nursing skills, personal experience and nursing action (Cloutier et al. 2007) constitutes a legitimate form of knowledge which can produce evidence that can be used in teaching nurses. In this last aspect, the underlying tension appears to reside in whether aesthetic knowing, can be legitimized in the field of nursing practice because that practice is situated within other (often more dominant) cultures (e.g. medicine) and the discourse of evidence based practice (Paley et al. 2007).

To build occupational knowledge requires nurses to develop effective information practices which enable them to reconcile the golden standards of evidence-based practice with the knowledge which is constructed through actual practice and through interaction with patients. This requires that nurses develop a way of knowing about modalities of information from which they can draw information that is relevant and appropriate. These modalities are constructed through the performative, material, embodied and emotional dimensions which underpin occupational knowledge not only *as that which is given* to facilitate care, but also

that which shapes nurses identities and performances. Occupational knowledge will be revealed at the *moment of practice* as this is when the actual work of nursing is occurring.

BACKGROUND

Information and Information practice

Practices are socially produced and it is through practices that communities are constituted as ‘a configuration of people, artefacts, and social relations’ (Gherardi 2008, p. 523). As such they reflect the outcomes of our engagement with the lifeworld (Habermas 1987) through which the specific types of information, knowledge and ways of knowing are legitimized. Information practices reflect these specific ways of knowing and are formed over time in relation to the social, historical and material structures that give a setting its particular characteristics.

As an anchoring practice within larger communities of practices (Wenger 1998, Cox, 2005), information practice enables practitioners to connect with information that shapes the community and connects them to the agreed ways of doing and speaking about things (Schatzki 2002). In nursing practice, information takes a number of forms. While it may be explicit and easily articulated through the written word (e.g. books, journal articles, etc), not all information available to an individual is explicit; it may also be tacit or unarticulated and derived from the embodied actions and experiences of practitioners (Benner 1984, 2000). This type of information cannot be fully articulated in written form, is often nuanced or socially influenced or it may be contingent and therefore only available at the *moment of practice* (e.g. tricks of the trade).

As a dispersed practice, information practice is constructed through a range of activities and affordances which reflect the way in which information is produced, organized, disseminated, distributed, reproduced and circulated within the community. Examples of information activities may include information seeking and searching within the domain of nursing knowledge, evaluation of information, critical thinking and reflection. Information practice will also involve a range of social affordances (Billett 2002) such as information sharing which aims at ensuring that practitioners negotiate the narratives and performance of work in similar ways. How information practice evolves within a setting will be underpinned by the overarching narratives that influence the relationships and interaction between people. In developing effective information practice, practitioners are influenced by a number of factors relating to how information and knowledge are understood by the profession and what information activities are sanctioned as part of workplace and occupational culture (Lloyd 2007).

Information use by nurses

Research into nurses preferred information use has identified a number of themes. Most studies (see for example Estabrooks et al. 2005a) focus on the selected activities of information practice (e.g. information seeking or use of the internet) rather than how the practice is formed, the range of activities that constitute it or the discourse that underpins its formation. In a more recent literature review, Spenceley et al. (2008) examined previous studies of the sources of information used by nurses to support practice. These authors report that while there is now an abundance of information available online, nurses did not appear to be accessing research relevant information.

Of the studies that have been conducted in the area of information practice within the health field, Johannisson and Sundin (2007) suggest that nurses must engage with both the discourse and discursive practices of the medical profession whilst at the same time engaging with the narratives of nursing as an occupational discourse. Similarly Lloyd's (2007, 2009) research into novices and expert ambulance officer information practices suggests that this group must engage with a number of narratives, which intersect with their own professional practice (e.g. nursing, medicine).

The professional work and context of nursing is interesting because of the need for nurses to cross a number of disciplinary boundaries (e.g. medicine, pharmacy etc) in order to access information and sources of knowledge. In this respect the work of renal nurses forms a specific site, that is, the renal unit. As such renal care has its own narratives and activities and is organized in specific ways.

Renal nursing was chosen for this study, as it has evolved in response to increasingly complex knowledge, technology, and clinical expertise required in the care of people with kidney dysfunction (Bonner 2006). This specialized field of nursing necessitates that the nurse has a thorough understanding of a information from a number disciplines and topics such as anatomy and physiology, pathophysiology of acute and chronic kidney diseases, pharmacology, biochemistry, microbiology, nutrition, psychology, education and the provision of various forms of renal replacement therapy to name only a few.

THE STUDY

Aim

This small and exploratory study sought to identify how renal nurses experience information about renal care and to identify the information practices employed.

Methodology

This study was situated philosophically in the concepts of Habermas' communicative action and Schatzki's practice theory. Habermas' theory of communicative action (1987) suggests that there are two dimension; a lifeworld as a place of communicative action and a system, a place for instrumental action. The lifeworld as a social space serves a number of functions - it provides the context for shared meaning and assumptions, for background knowledge and for shared reason. The concept of practice theory (Schatzki 2002) lies in developing an ontological understanding how social life is constituted and transformed through practices that occur within a field of practice (i.e. a setting). A field is a 'mediated array of human activity centrally organized around shared practical understandings' (2001, p. 3). A practice is therefore, a 'bundle of activities' and when people connect together in a setting they engage in 'organized constellations of actions' (p. 71). This means that the sayings (that which is spoken) and the doings (that which is done) occur together at that setting. Adopting a practice approach to understanding how nurses in a specific setting develop information practices, enables us to frame our understanding of how information practice is shaped in relation to the dimensions (cultural-discursive, material, and historic) of sociality which constitute human co-existence.

Lloyd (2010a) defines information practice as an array of human activities and skills, which are constituted, justified and organized through the social site and mediated materially socially and corporeally in the production of shared understandings. In this respect our

definition of information practice does not privilege individuals, but focuses on the *social* as a ‘field of embodied, materially interwoven practices centrally organized around shared practical understandings’ (Schatzki 2001, p.3). Attending to information practice as a research object enables us to focus on the underlying relationship between sociality, information and knowledge, because it is through this relationship that knowing in action and meaningful practice occurs. It also enables us to understand what information counts in the development of nursing knowledge.

Participants and Setting

Participants were drawn from two renal units attached to regional hospitals in NSW Australia. In brief, satellite renal units provide haemodialysis and peritoneal dialysis for people who have end-stage kidney disease (stage 5 CKD) who are physically stable and live at home, but without this treatment, would die. Satellite renal units are commonly used across Australia in metropolitan, regional and rural settings. These units provide services closer to peoples’ homes, and for people living in regional and rural locations, these units avoid people having to re-locate hundreds of kilometers for renal health care. Typically a satellite renal unit is staffed by nurses with very limited access to a renal medical physician [nephrologist] who may be present in the renal unit one day per month, and with almost no other medical support. Six registered nurses with varying lengths of renal nursing experience were purposively sampled and agreed to participate in the study.

Data Collection

During 2009 in-depth interviews with renal nurses occurred at a mutually convenient time and were audio-recorded. Interviews were held in an office connected to the renal unit at the

end of a shift and lasted approximately 60 minutes. Interview questions were informed by the emerging information practice literature and focused on eliciting responses regarding their understanding of information and knowledge in relation to renal nursing and its practice; identifying the modalities of information employed in developing occupation practices; identifying the information skills nurses employ to learn about renal practice; and the role of other health professionals in informing the practices of renal nurses. Interviews also allowed the researcher to clarify participants' answers and to encourage participants to expand on their responses. Participants were invited to check the transcripts for accuracy and completeness of their views. One participant clarified their responses and all others did not request changes.

Ethical Considerations

Human Research Ethics Committees for both hospitals and the local university provided ethical approval for the study. Voluntary informed consent was obtained from participants prior to data collection, and data was de-identified through the use of pseudonyms.

Data Analysis

Thematic analysis, a method for identifying themes, essences or patterns within interviews, allows the researcher to discover conceptual meaning (Tuckett 2005, Schneider et al. 2007). Following verbatim transcription and adapting the thematic analytical technique described by Liamputtong and Serry (2010), each author individually read, interpreted and manually coded each transcript and then clustered the codes into groups with similar themes (i.e. meaning). In the next phase of analysis, the authors worked together using the groups to develop larger clusters of highly conceptualised groups. Finally through an exhaustive process of analysis

and comparison back to the original transcripts, data were clustered arranged in major themes. These themes were then evaluated for the most appropriate fit with the original data (i.e. rigor).

FINDINGS

In this study renal nurses revealed an information landscape which was an intersubjective space that was created when nurses came together in practice and information was shared. The information landscape was characterized by a number of dimensions related to renal nursing practice. First, the institutional dimension was constituted by the *epistemic* modality of information from which renal nursing knowledge was located and facilitated the development of mutual understandings about how the practice of renal nursing should proceed. Second, the *social* dimension was constituted by the social modalities through which tacit and nuanced information about renal nursing practice and renal nursing identity were accessed, and through the *corporeal* modality through which corporeal and contingent information resided. Finally renal nurses were *coupling* together the epistemic, social and corporeal modalities of information.

Mapping the Landscape

As they engaged in renal practice nurses mapped their information landscape and reconciled their understanding about what constituted information and knowledge, and identified a range of information sources which effectively supported their professional development and ensured the quality of care for patients. How this map was created, was summed up in the following way:

It's through a lot of time, it can be a bit of puzzle in health services [practice]...you go to a folder, you can ring a person, there are lists of people who do different things, it's having the knowledge of who is responsible for each area.

The idea of creating a landscape map was also seen as an important task which would enhance professional and clinical judgement. As one participant commented:

definitely, and then you choose which one you think would be better for the question or the problem that you need to solve, you choose which you would think would actually solve it for you.

Drawing on Epistemic Information

In defining the concepts of information and knowledge renal nurses made clear distinctions about the differences between these concepts. Information was considered to have more dynamic and fluid qualities and their descriptions centred on actively encountering and engaging the information landscape to identify what is relevant to their work. One participant summed the concept of information as:

just the things that you are told or that you gather...or it could be anything from subjective or objective, it could be any range of things.

Another suggested that:

identifying good information relied on your ability to take in what's relevant and what isn't.

Knowledge on the other hand was considered to have a more stable and entrenched quality and ‘knowing what to do with facts’. For something to become knowledge, judgements were made against nursing experiences and in the context of the dominant medical culture through which these nurses operated. One participant stated that:

knowledge is probably a more scientifically based acquisition of information.

Knowledge is legitimate thinking...based on your experience and the information you've gathered and either taken in or discarded because it is not good.

Drawing from Social Information

Nurses in this study emphasized the critical importance that is placed on social sources of information – citing other nurses, allied professionals and patients as information sources that contributed to and enabled their practice and their professional development. Here the significance is related to experiential information which is difficult to articulate in textual form. As a participant explained:

Predominately it is a nurse, another renal nurse with similar type of experience...exposed to a lot more patients and may have experienced or a different cue or trigger point that you might have about this or what about that should actually lead you to an intervention that might work

While another stated that:

It's a combination of people from different backgrounds so it could be the renal physician that we deal with...depending on circumstances ...it could be nurses or allied health dieticians or pharmacists ...people that you

work with previously ... and it's that sharing of information about a new drug that you might need to use.

Drawing on Corporeal Information

The concept of corporeality and the role the body plays as a significant information source was also described by nurses in this study. Here it is not only nurses own bodies which act as a source of information but also the bodies of patients (the diagnostic body) and the bodies of other nurses; all of which play an important role in the learning about the practice and the performance of renal nursing. Nurses in this study reported that sensory information was:

really important, I use my sense of touch to assess the patient, my eyes, to sense what I am hearing...my sense of smell is really important; probably the only thing I wouldn't use is my sense of taste.

Nurses' understanding about the importance of the body as a source of diagnostic information was summarized in the following way:

...when they're in the chair and they're having treatment, I mean you can see a patient becoming hypotensive before they actually are, you could just look over and think you don't look right and you'll say are you okay and they say 'I was just starting to feel a bit light headed you know or they'll yawn'...You go with your gut feeling that they're not right.

In relation to hearing as a source of diagnostic information a participant explained that:

a lot of patients don't even realize, [its] just on the words they use or what they say when they come in, you know there's something to look for intuitively from

experience I guess and from experience of that person and from your nursing experience as well.

When asked whether patients' bodies become a source of information, a response was summed up by one participant as:

you can read [about] signs and symptoms but until you actually say to someone can you smell that, that's an infected wound you don't know the smell. You can read that wounds have odours, smells, you can read that someone has an acetone smell...but once you've experienced it hopefully you've got that memory card working in your brain that you can recall that smell and you can recall variations of that smell.

In this respect corporeal information was used to trigger alarm bells and provide a source of diagnostic information which allowed nurses to judge patient's conditions rather than solely relying on technical information provided by a dialysis machine.

Nurses in this study also emphasized the importance of embodied information which was obtained through the experiences of situated practice. Being able to access embodied information was crucial for renal nurses. One participant commented that:

what you see triggers all those other things in your mind as to what's going on, whether they walk in and they're happy or sad...triggers alarm bells or not straight away and a couple of questions will often find that you know they're not crash hot.

For all nurses in this study importance was placed on embodied information particularly that information that was obtained from observing and listening to patients' and by extension the technology connected to them. That is together the patient and the dialysis machine was considered as a whole. The development of observation skills was necessary for renal nursing practice because:

...nurses may be sitting at the nursing station but they may be observing at the same time,...that somebody is moving around in their chair or that they might be about to bend their arm,...that a dialyser looked a little darker..., walking past you may notice something that is not right with the machine, so it's that observational thing.

Listening to patients was critical for nurses in this study; it was important in assessing patients prior to, during or after each haemodialysis session and was more than the listening associated with auscultation of bodily sounds. One participant said that:

what the patient tells you, what they've been doing or what their problems are or what they're telling you is important.

Listening to patients was necessary to do "before you do anything with them when they come in" because renal nurses use the information verbalized by patients to:

see how they're going and what particular issues might come up since the previous session because...without asking the patient how they were from that last session that might be an incorrect number so you need to check with the patient that they're ok and everything's fine since the last session.

Coupling Information Sources

Lastly this study found that renal nurses used a process of coupling information from a range of information modalities (epistemic, social and corporeal); the information was drawn together and rendered the renal nurse in the *moment of practice*. A range of information sources and activities were used during renal nursing practice and each was judged regarding the contribution of the sources made to their everyday work and enabled them to practice safely. Of these activities, nurses suggested that information sharing to be the most important, producing a range of outcomes (i.e. group solidarity, mutual understanding, informal and incidental learning opportunities). The notion of solidarity was prominent for these renal nurses who situated themselves both spatially and culturally outside the mainstream hospital (satellite). As one nurse expressed

...because we are kind of stuck at the end of the hospital to start with and then it's almost like everyone is afraid to come in the door.

Sharing information was important and contributed to the overall functioning of the renal nursing team as it was a way to:

resolve a lot of things by discussion with the group and you make plans...and also gathering resources you might be thinking I need to do this and that and the other person says 'why don't we use this resource and that resource'.

DISCUSSION

This study found that a range of activities and skills form together and constitute the information practice of nurses. These activities and skills reflected the various modalities and different ways of knowing during renal nursing practice. This practice was constituted

through an information landscape which was characterized by discourses related to nurses own occupational discourse which reflects their embodied and nuanced understandings of patient-based care, EBP and other disciplines such as medicine. These discourses reflect differing ontological and epistemological positions in relation to how nursing practice occurs (Murray et al. 2007, Paley et al. 2007). Renal nurses in this study reported that both were important to their professional practice. In describing this distinction between the dominant discourses and the problems this causes for nurses, Scheel et al. (2008) suggest that ‘the problem in relation to nursing is that nursing and caring are connected to the lifeworld, but practiced in the system world’ (p. 633).

A renal nurse’s lifeworld was constituted through occupational discourses which reflected the situated, embodied and socially nuanced performances related to caring, practice and solidarity. According to Lloyd (2010b) as people become aware of where information is situated they use a strategy of coupling different information modalities. In the process of coupling, ‘the institutional knower is positioned by the affordances of the community that influence the actions and activities required in actual practice’ (Lloyd, 2010b, p. 175). In this study renal nurses draw from sources of information that enabled them to develop their situated identity, solidarity and affinity with other nurses in the renal unit, other health professionals and with renal patients. Different information practices have been found to be inextricably linked to the interactions between nurses and highly influenced by the context, type and culture of each practice setting (Mantzoukas & Jasper 2008). The occupational discourses were therefore not viewed by renal nurses in opposition to the dominant discourses of EBP or medicine but *in-relation* to it.

The *situated nurse* is socially constructed and reflects the social and embodied information modalities, their situated identity as renal nurses, and through their experiences of renal nursing. In accessing these modalities, renal nurses engage with the specific embodied meanings through which the lived practice of renal nursing is shaped, and through this engagement they develop intersubjective identity and learn to work collectively. This information was nuanced, not readily expressed in written form, deeply reflexive, contingent on the situation being encountered and was consequently often only made visible to other nurses in engaged in renal practice at the *moment of practice*. Our findings resonate with the sources of knowledge described by Estabrooks et al (2005a, b) which are frequently situated in practice rather than from textual sources.

It is through information related activities such as discussing with others and reflecting on past actions and experiences, that the nurses in this study shared information with each other. Here information modalities reflected the situated practices of nurses in particular the corporeal (sentient and sensory) information practices related to seeing, hearing, touching and smell which form the ‘gut instincts’ nurses often speak about, and others refer to as tacit know-how, intuition and proceduralized knowledge (see for example Benner 1984, Titchen & Ersser 2001, Welsh & Lyons 2001, Eraut 2004, Mantzoukas & Jasper 2007, Lyneham et al. 2008). Information practices reflected these modalities at the *moment of practice*, and nurses indicated that skills such as listening, observation, reflection (on experience) and communication skills were highly valued in relation to accessing and disseminating corporeal information.

Renal nurses also reported forming embodied communities that were situated within the renal unit and, through which, nurses draw information which has often been disregarded by the evidence based discourse because it is difficult to articulate, control and measure and is often only available at the *moment of practice*. Embodiment acknowledges that a nurse's own body is a source of information due to the social connections and physical cues nurses receive while providing nursing care for patients (Kontos & Naglie 2009). The defining characteristic of the embodied community in this study was that it was formed through the practice of renal care (not because of it). Nurses identified strongly with the social and corporeal dimensions of their practice and the ways of knowing their practice had been constructed overtime.

This study suggests that renal nursing practice is relational and requires nurses to connect with a range of discourses and knowledge's apart from their own nursing knowledge to: develop a holistic patient centre care approach; continue learning; and improve their specific practices. Subsequently renal nurse's information practices reflected their ongoing interaction with a range of information modalities that contribute to ways of knowing. Interacting with the epistemic paradigm of evidence based practice favoured by the medical profession influences the 'why' of practice of nursing practice. However, it is the informal and embodied information relationships, characterized by tacit know-how forms of information, which influence the 'how' of the renal practice lifeworld. Understanding that renal nurses' information practice are an intersection of epistemic, social and corporeal information sources has implications for practice as it assists in understanding both the science and the art of renal nursing and can be used to inform the transition of nurses from formal education to clinical practice.

Limitations of the study

As a qualitative study, the findings focus on the local context and the particular time in which this study took place and while they are not generalizable to a wider population of either renal nurses or nurses in other practice settings, the findings will resonate with other nurses. We employed several strategies to minimize the limitations including both authors undertaking individual coding of each transcript prior to moving to higher levels of thematic analysis; reflective memoing at the end of each interview which was used to explore our understandings; and to move the research towards intersubjective conceptualisation. Finally a detailed and close immersion in the data occurred during each phase of the analysis.

CONCLUSION

The ‘warring’ in the nursing literature about which knowledge’s should be privileged and which should remain secondary, appear to reflect the paradigmatic debates that surround the nature of research and research validity. While we do not suggest that these debates are unimportant, what they do not reflect in relation to nurses is how practice is shaped. In this respect, exploring how nurses engage with these information modalities, and the role the modalities play in situating and enacting epistemic, social and corporeal knowledge into everyday nursing practice becomes informative, because it indicates that nurses must engage with all three modalities in order to perform effectively, efficiently and holistically in the context of patient care. This is why further research about the information practices of nurses is warranted including: In what way is the information landscape of renal nurses represented here reflective of other nursing practice domains? And can a theoretical model be developed which frames nursing information practices and make them teachable to novice nurses?

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